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An Outbreak of Bronchitis (Infectious Respiratory Catarrh) in Horses

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There was a widespread outbreak of respiratory disease in horses during the winter of 1946-47, and it seems that some details of the disease over, at least, one area of the country should be recorded. Table I shows the number of horses affected in the Manchester Stables and Table II the number affected in other towns and the date when the disease began.*

The first symptom noticed was coughing, unless temperatures were taken regularly, when it was found that there was usually a rise of temperature the day before coughing began. On the day when coughing was first noticed the temperature was usually 102 to 103° F. If the animal was worked the temperature went up to 105° F. and the animal would almost certainly develop pneumonia or purpura haemorrhagica.

If, on the other hand, the horse was given steamed hay, soft food and the chest rubbed with liniment the temperature dropped to 101° F. and with rest it remained at about the same level for three days, when it went up to 102° F. for two days; with the commencement of nasal catarrh it dropped to 100° F. The normal course was 10 to 14 days, the temperature being elevated for the first eight days, but during all this time the horse looked bright and ate well. The breathing resembled that of a "broken-winded" horse and the "pleuritic ridge" could readily be seen. Except during the last few days fits of coughing were common and they were sometimes so violent that the horse fell to the ground. If a horse was worked at any time before it was fully recovered, pneumonia or purpura almost certainly ensued, and even after recovery work had to be resumed gradually. The administration of sulphanilamide did not appear to exert any beneficial effect on the course of the disease.

When once the first few cases had occurred in a stable the disease spread rapidly and 50 per cent. or more of all horses ultimately infected usually sickened within four days. New cases did not usually develop more than 14 days after the commencement, and the outbreak was over within a month.

Some horses which were apparently recovering developed purpura which began with swelling of the legs, brisket and jaw; ecchymoses on the mucous membrane were not severe except at Liverpool, where bleeding from the nose sometimes occurred. In all, 41 horses at Manchester developed purpura. Of 19 which received symptomatic treatment 12 died, but of 22 which were given 125 c.c. of a 33 per cent. solution of sodium sulphamezathine intravenously followed by 75 c.c. twice daily for two more days only five died; and it was frequently evident that horses became much brighter after the institution of treatment. It should be noted that, even assuming the horses did not weigh more than 800 kg., the daily dose was only 0·05 gm./kg., whereas it has been shown by Francis (1947) that the dose should not be less than 0·1 gm./kg.

Routine autopsy reports show that of 18 horses which died during the epidemic in Manchester 12 had developed purpura haemorrhagic, five pneumonia, which was gangrenous in three, and one died from extensive pulmonary haemorrhage, probably because she became cast in the stable during coughing. Four similar reports from Liverpool showed that all had developed purpura haemorrhagica. Cultures were made by Mr. J. Francis from the spleen, subcutaneous exudate and swellings from two horses which died in Manchester. A Group C streptococcus was isolated from the swellings in one horse.

DISCUSSION

It can be seen from Table I that the percentage morbidity was lowest in the best ventilated stable but the results as a whole do not show any close correlation between morbidity and ventilation. The morbidity was 54·8 per cent. in 272 horses in small stables and 61·6 per cent. in 514 horses in the Manchester stables, and inspection of Table II shows there was no real correlation between the size of the stables and the number of animals affected.

Literature describing the respiratory diseases of the horse was reviewed by Francis (1942) who prepared the following classification:

* Tables over-leaf.

	Contagious pneumonia	Influenza	Infectious respiratory catarrh†	Strangles
Incubation period ...	Long, up to 40 days.	Short.	Short.	Short.
Infectivity	Low, only by direct contact. Spread is irregular, and the duration of an outbreak in a group of horses is much longer than with the other diseases.	High, by direct and indirect contact. May assume very severe epidemic proportions.	High, by direct and indirect contact.	High, by direct and indirect contact.
Symptoms	Primary fever with regular temperature curve may pass almost unnoticed. Pneumonia may then develop, accompanied by a secondary rise of temperature. A yellow discharge from the nose is said to be pathognomonic.	Primary fever with larger diurnal variations of temperature, marked depression, cardiac and muscular weakness. Reddening of mucous membranes and swelling of subcutaneous tissues. Severe intestinal, or less often respiratory involvement may follow.	Fever, purulent rhinitis, coughing and occasionally swelling of the submaxillary lymph nodes. Pneumonia may occur under adverse conditions.	Fever, early rhinitis, followed by marked swelling and often abscess formation of the submaxillary lymph nodes. Pneumay occur under adverse conditions.
Action of neosalvarsan	Effective.	Not effective.	Not effective.	Presumably not effective.
Mortality	Higher than in the other diseases, 10–20 per cent.	Usually low.	Low.	Usually low.

† Also known as equine infectious bronchitis, epizootic laryngotracheitis, epizootic cough, Hoppegarten cough, Brussells disease, skalma.

TABLE I

THE NUMBER OF ANIMALS AFFECTED IN THE MANCHESTER STABLES *

	Date when outbreak began	Number of horses	Affected	
			Number	Per cent.
Salford	3.2.47	144	52	36·0
Ancoats	29.1.47	175	141	80·6
Oldham Road ...	28.1.47	117	83	70·9
London Road ...	28.1.47	242	125	51·5
Liverpool Road ...	29.1.47	158	113	—

* The worst ventilated stables are at the bottom of the table.

TABLE II

THE NUMBERS OF ANIMALS AFFECTED IN VARIOUS TOWNS

	Date when outbreak began	Number of horses	Affected	
			Number	Per cent.
Manchester ...	28.1.47	836	514	61·6
Liverpool	31.1.47	334	202	60·5
Blackburn	2.2.47	40	32	80
Preston	5.2.47	67	15	22·4
Morecambe ...	12.2.47	6	2	33·3
Buxton	4.2.47	4	3	75
Caernarvon	5.2.47	5	4	80
Patricroft	20.2.47	5	5	100
Bury	20.2.47	3	3	100
Chester	21.2.47	21	12	57·1
Warrington	24.2.47	31	23	74·2
Penrith	31.3.47	8	2	25
Bolton	27.2.47	3	2	66·7
Accrington	5.3.47	12	10	83·3
Southport	8.3.47	17	12	70·6
Ormskirk	8.3.47	3	1	33·3
Blackpool	16.4.47	25	8	32
Rochdale	19.4.47	22	15	68·1
Total ...		1,442	865	60·0
Total, excluding Manchester and Liverpool		272	149	54·8

It will be seen that the present epidemic was clearly differentiated from contagious pneumonia (Brustseuche) by its high infectivity and short incubation period. In addition, the mortality at Manchester was only 17 out of 514 affected horses (3·31 per cent.). It was obviously not strangles because swelling of the throat was not common and abscesses did not occur. The absence of depression, marked cardiac and muscular weakness in the early stages, together with the fact that the mucous membranes were not red and swollen, again almost certainly excludes equine influenza. It should be realised that equine influenza differs widely from human influenza and the disease may be transmitted by the subcutaneous inoculation of blood. It has been recorded that one stallion transmitted the disease by coitus for six years (see Francis, 1942). The present epidemic resembled infective respiratory catarrh in that it was highly infective and the incubation period was short. Coughing was a marked symptom, especially when the trachea was touched. Waldmann (1936) transmitted infective respiratory catarrh to calves and pigs by the inoculation of nasal filtrates and Mitscherlich (1941) found the blood infective by subcutaneous inoculation, but he failed to transmit the disease by inoculation of nasal filtrates. Unfortunately it was not possible to conduct any transmission experiments to confirm the nature of the present outbreak.

Literature on the aetiology of purpura haemorrhagica has been reviewed by Jennings and Highet (1947) who made observations during the same outbreak of respiratory disease described in the present paper. They observed ten cases and confirmed that there was a severe anaemia and hydraemia and the changes in the leucocyte picture indicated that there was a toxic process in the body. Various therapeutic measures, including the injection of calcium lactate, met with little success.

The isolation of a Group C streptococcus from a case of purpura haemorrhagica and the apparent value of sulphamezathine tends to confirm earlier observations on the aetiology of this condition and the value of antistreptococcal serum. It may be that sulphamezathine will prove of value in the treatment of this condition.

Summary

A widespread outbreak of a respiratory disease in horses similar to "infectious respiratory catarrh" is described. A proportion of cases developed purpura haemorrhagica and some died. Two were examined bacteriologically and a Group C streptococcus was isolated from the subcutaneous swellings in one. This finding, together with the apparent beneficial effect of sulphamezathine, provides some support for the view that streptococci have some causal relation to the condition.

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HUMAN ANTHRAX FROM ELEPHANT TUSKS

"Anthrax is primarily a disease of herbivorous animals and has been reported from nearly every country in the world, but it is most prevalent in India, Africa, the Middle East, and China," observes *The Lancet* in its issue of February 21st, and proceeds: "Cases in elephants have been reported in Europe, India, and Africa. Anthrax in man is contracted from infected animals or animal products, so elephant products would be expected to be a potential source of human infection.

"An unusual case reported from the United States* arose in a man of 59 who had been making piano keys from elephant tusks which he cut with an electric saw lubricated with water. The only cleansing to which the tusks were subjected was swabbing the cores with a long-handled sponge soaked in water. The illness began with a small pimple on the face. Within three days the man became progressively ill with chills and fever and on the fourth day he became semi-comatose and was admitted to hospital. Blood smears revealed large Gram-positive encapsulated rods occurring singly and in long chains; Gram-positive rods were also found in a smear of oedematous material from the face lesion. Penicillin therapy was begun but the patient died five hours after admission to hospital. Necropsy confirmed that the cause of death was anthrax. Preliminary spot sampling of surface areas of whole tusks for the presence of anthrax bacilli was negative, and negative results were also obtained on examination of the cleaning sponge. It is remarkable how seldom anthrax bacilli are found on suspected material. In this case the bacilli were subsequently isolated from the tusks, and the method of obtaining the sample is worth recording. A double bucket was used, the sides and bottom of the inner bucket being perforated. Samples of tusk scraps which had been sawn by the man before his illness were placed in the inner bucket under tap water and brushed. The washings were drained and poured into sterile jugs. In the laboratory the samples were centrifuged and the sediment taken up in about 50 ml. of sterile water. After guinea-pig inoculation a pure culture of *B. anthracis* was isolated. Some of the guinea-pigs died early from gas-gangrene infection. An attempt to isolate *B. anthracis* by culture without animal inoculation was unsuccessful.

"The case illustrates the importance of considering anthrax in the differential diagnosis of cutaneous lesions in workers who handle elephant tusks. It appears that there is no known method of sterilisation which does not alter the physical qualities of the ivory."

* SEIDEMANN, R. M., & WHEELER, K. M. (1947.) *J. Amer. med. Ass.* **135**. 837.

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A list of publications of the National Institute of Research in Dairying is obtainable on application to the Librarian of the Institute, Shinfield, Near Reading, Berks. A list of recent publications of the United States Department of Agriculture is available on application to the Department's Office of Information, Washington 25, D.C.

Public and Private Slaughter-houses in England and Wales

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In 1922 the Departmental Committee on meat inspection estimated that there were 20,000 private slaughter-houses and about 100 public abattoirs in England and Wales.

In 1938 the number of private slaughter-houses was approximately 15,000 and the number of public abattoirs had risen to 115.

Temporary Closure of Private Slaughter-houses by Ministry of Food for the Rationing of Meat

The Minister of Food, as a war-time expedient for the purpose of the effective rationing of meat, prohibited under the Livestock (Restriction of Slaughtering) Order No. 2, 1940, slaughtering of animals for butcher's meat and undertook the purchase and slaughter of such cattle, sheep and pigs and the distribution of meat to the trade. On January 15th, 1940, all private slaughter-houses ceased to deal with rationed food animals (cattle, sheep and pigs) and licences in respect of the majority of these premises were not renewed when they expired. An assurance was given by the Government that this measure would not prejudice consideration of the licensing of such private premises after the expiration of the period of national emergency.

The Ministry of Food took over a relatively small number of slaughter-houses throughout the country in 1940 and concentrated the slaughter of cattle, sheep and pigs in conjunction with the rationing of meat. The closure of a large number of slaughter-houses has undoubtedly proved beneficial from the general public viewpoint and presumably from the aspect of the national economy. The overall cost of slaughtering should theoretically, be considerably reduced when centralisation of slaughtering is wisely planned, whilst at the same time the economical utilisation of by-products (so often wasted, or not used to the full advantage, in a multiplicity of premises not being utilised to full capacity) becomes a practical proposition. The prejudice of local authorities against private slaughter-houses is influenced largely by the fact that many are by reason of age, structure, the encroachment of dwelling houses, and the considerations of town planning, unsuitable or badly situated and often affect the amenities of built up areas. The small "family" butcher who took a pride in going to market to purchase beasts on the hoof and to slaughter and dress them during "off hours"—when business in the shop was over or slack—is fast dying out. The years which have elapsed since he was permitted to practise his art and craft have caused his numbers to be very materially reduced. Even if the Government and local authorities were willing to allow private slaughter-houses to resume operations it is abundantly evident that a comparatively small proportion of those in use prior to 1940 would be reopened by their present owners or other prospective occupiers.

Answers to questions raised in Parliament leave no doubt that the Government do not contemplate the reopening of private slaughter-houses in the immediate future or in the numbers which existed before the war of 1939-45.

There is, however, a fairly strong opinion that home killed meat should be slaughtered locally and that the distance which it has to travel from the abattoir to the butcher's shop should be as short as possible to prevent deterioration of the meat and to retain the fresh pleasing "bloom" of good, recently killed and well-handled carcases.

A few private slaughter-houses are still licensed, and in use, for the slaughter of horses, mules, donkeys, goats and other animals for the production of unrationed meat.

Centralised Slaughtering

The establishment of a few large abattoirs to serve the whole of the country is probably unlikely to find favour with the retail meat trade, but centralised slaughtering to cover the needs of a relatively large number of inhabitants spread over not too large an area is more likely to be acceptable; thus the establishment of publicly owned abattoirs in the very large towns or in a district comprised of several smaller local authorities appears to be a compromise that should be adopted in the case of municipal abattoirs. The public are singularly ill-informed on the subject of meat inspection and the hygienic production of meat. England and Wales alone among the civilised countries, prior to the late war, tolerated a system which had been abolished 50 to 100 years ago in most of them.

We have very rigid conditions governing the importing of meat into this country—so rigid, indeed, that the exporting countries have been forced to institute hygienic slaughtering and efficient systems of veterinary meat inspection in order that their products could be admitted in this country. Yet in 1939 the major part of our home killed meat was subjected to an haphazard method of control, much meat not being inspected at all, while much was inefficiently inspected owing to the lack of experienced inspectors or the impossibility of efficient inspection under the conditions then obtaining. In Ireland and Scotland the position is entirely different from that obtaining in England and Wales. Both in Northern Ireland and in Eire within the last 10 to 15 years, meat inspection has been placed on a sound basis, hygienic slaughtering, uniform inspection and grading of the meat being carried out in an efficient and economical manner.

In Scotland, all towns of over 5,000 inhabitants (and some of even less) have public abattoirs, there being 137 public abattoirs in Scotland (113 public abattoirs in the towns and 24 in the counties).

Over 90 per cent. of all home killed meat consumed in Scotland is killed and inspected in public abattoirs. This position has been brought about as a result of the Burgh Police (Scotland) Act, 1892, which prohibits, without compensation, the use of private slaughter-houses in those localities where a public abattoir is erected.

Advantages of a Public Abattoir

The advantages to the general public of a public abattoir may be summarised as follows.

There being one, instead of many, slaughter-houses, the public abattoir can be built in a suitable location having regard to town planning requirements.

Owing to centralisation and concentration of slaughtering, the work can be carried out in an efficient and economical manner, in premises which are suitable for the work. Many private slaughter-houses which operated in the large towns prior to 1940 were reminiscent of the middle ages. Traffic to and from the abattoir can be directed so as to prevent congestion on the roads and if the abattoir is suitably situated—as it should be—with its own railway siding, then road transport is very materially limited, especially with regard to the conveyance of live animals.

Where slaughtering is centralised, the system of meat inspection becomes uniform and the anomalies of meat being passed in one district and being rejected in another are very materially reduced. The meat inspector can only become efficient with practice and he must learn his job on the floor of the slaughter-house. Opportunities for gaining experience in meat inspection are much greater in large establishments than in a multiplicity of small slaughter-houses. In a public abattoir, it is possible to watch every process associated with the slaughtering of the animal and the handling of the meat. Unless an inspector is present during the whole of the operation, efficient meat inspection becomes impracticable.

A satisfactory system of meat inspection is impracticable when slaughtering takes place in a number of small slaughter-houses scattered throughout the district and operating, more or less, at the same times. It is economically impossible to have an inspector always available to be present at each slaughter-house; he, therefore, has to keep several slaughter-houses under observation at the same time. In a public abattoir, slaughtering takes place within reasonable limits during normal working hours, whereas in privately owned slaughter-houses (especially those run in conjunction with a retail butcher's shop) slaughtering takes place, in the majority of cases, after them, thus involving the inspectorate in long working hours.

Centralised slaughtering also enables *ante-mortem*, as well as *post-mortem*, inspection to be carried out. *Ante-mortem* examinations are essential to efficient meat inspection. Conditions may then be noted which do not show gross lesions on *post-mortem* examination. Animals may thus be marked for a special *post-mortem* examination. Obviously diseased animals can be segregated and slaughtered in a part of the abattoir especially reserved for this purpose; thus contamination of healthy meat is avoided. *Ante-mortem* examinations are also a valuable means of preventing the spread of contagious diseases among animals in the abattoir premises and give an opportunity to detect diseases which are scheduled under the Diseases of Animals Act. This permits of rapid and effective action in tracing the origin of the outbreak, thus greatly assisting the Ministry of Agriculture in the control

of the scheduled animal diseases. Centralisation of slaughtering also materially aids the humane treatment of animals. In a public abattoir the employees become expert at their work and being constantly under supervision they are less likely to become careless than the workers in a small privately owned slaughter-house. The construction of many private slaughter-houses is not conducive to the best conditions for the animals.

In a public abattoir hygienic methods in the production of meat and the handling and storage of meat are relatively easily applied, whereas in some of the smaller privately owned slaughter-houses, facilities and knowledge are often lacking. Food poisoning is more likely to arise when meat is killed and stored on private premises.

The emergency slaughter of an animal on account of accident or disease, always presents difficulties to the meat inspector and imposes a heavy responsibility upon him. Cases of food poisoning, not due to *post-mortem* contamination, are commonly associated with animals killed in an emergency. The public abattoir is the obvious place for dealing with emergency slaughter. Facilities are available for the handling of such an animal and the inspector, being an expert at his work, is more capable of judging the suitability or otherwise of the resulting meat. Most cases of emergency slaughter take place in premises other than a public abattoir. Where public abattoirs exist, the need for emergency slaughter appears to show a marked decline. Emergency slaughter is often referred to, by the butcher, as "killing to save the animal's life." What is meant is killing the animal to save the owner loss. Where a rigid system of meat inspection is practised, the majority of obviously unfit animals go to the knacker's yard instead of being used for human consumption.

A properly equipped abattoir contains the equipment necessary to deal with the by-products of slaughtering which are wasted in small private slaughter-houses. Since the Ministry of Food have taken over the slaughtering of animals, many by-products hitherto wasted have been utilised to the national advantage. A much fuller use of by-products, however, could be made in suitably equipped public abattoirs, and by the full exploitation of these products the overhead expenses of the abattoirs can be very materially reduced. Indeed, in America (both North and South) the by-products yield sufficient income to pay for the maintenance of the large slaughtering establishments.

There is evidence that a certain amount of illicit slaughtering still takes place throughout the kingdom. Occasionally the offence is detected and the offenders brought to justice by the Ministry of Food. There is reason to believe that the number of prosecutions taken by the Ministry of Food does not give a true indication of the extent of these illegal practices. The establishment of a public abattoir, with the congregation under one roof of tradesmen and others concerned with the provision of a sound and satisfactory meat supply for human consumption, acts as a source of information to the authorities of certain of these illegal practices. The fact that freshly killed meat in certain districts can only be produced legally at a definite location makes the illicit slaughter of animals a much more hazardous business for the unscrupulous person.

Efficient meat inspection increases the confidence of the meat traders in meat inspection and materially enhances its value to the trade and the public.

In 1933, statistics were forwarded to the Cattle Diseases Committee of the Economic Advisory Council supporting evidence, given by the writer, of the amount of disease found in over 100,000 animals slaughtered for human consumption. The amount found in apparently healthy animals emphasises the need for an efficient meat inspection service, and experience has shown that where a fair and just, but reasonably high standard of inspection is practised, the number of diseased animals tends to decrease in the course of time.

Meat slaughtered in one district is frequently consumed in another. The district where the animals are slaughtered not only has to pay the salaries of its inspectors but it also has the nuisances inseparable from slaughtering establishments, especially private slaughter-houses, whereas the consuming district benefits from the inconvenience and expense incurred by the producing authority.

A modern abattoir should be constructed as a temporary, rather than as a permanent building. However much care is given to planning of an abattoir, it is found that within a few years of its erection, owing to faults in design, change in the surroundings, or other conditions not appreciated at the time of its erection, the building is less useful than the architect visualised.

The walls of a slaughter-house are usually massively constructed in order to support the great weight of the carcases hanging from overhead rails. The overhead rails should be carried on iron pillars, not supported by the general structure; the walls and roof can then be of relatively light construction allowing alterations and additions to be made comparatively easily.

Although the question of knackeries is not the theme of this article, this problem should be borne in mind. Knackeries are much more offensive in every way than slaughter-houses, and the trade of the knacker-man needs to be watched very closely. The need for centralised knackeries is obvious to anyone acquainted with this trade. It is worth considering whether a public knackery should not be run in conjunction with a municipally owned abattoir. The knackery should be in a separate building conveniently situated near to the public abattoir. Meat rejected in an abattoir could then be passed to a knackery and used, under adequate supervision, for utilisation as animal feeding-stuffs. Products from the slaughter-house unsuitable for this purpose and waste products from the knackery, could then be dealt with by suitable machinery—available to both establishments—for the manufacture of fertilisers and other products.

Control of Meat Production

In Great Britain, public abattoirs are usually provided and maintained by local authorities, but it is the writer's opinion that they should be under direct Government control and the expenses in connection therewith spread evenly over the whole population. The alternative to this is ownership by the trade or by large companies formed specifically for the purpose. Meat inspection is the responsibility of local authorities and the Ministry of Health, but meat is, like milk, purely an agricultural product and as the supervision of the production of milk has recently been transferred from local authorities and the Ministry of Health to the Ministry of Agriculture, there seems no logical reason why meat should not be controlled in the same manner. The Ministry of Agriculture exercises some supervision over farmers and their products both vegetable and animal, and it would merely be an extension of the powers already exercised by the Ministry of Agriculture to include the collection and slaughtering of animals in public abattoirs under the supervision of the Ministry of Agriculture. Meat inspectors in the large slaughtering establishments would then be officers of the Ministry of Agriculture and Fisheries, instead of officers of the numerous local authorities; thus the Ministry would become responsible for food animals during the whole of their existence, until they were ready for the butcher's shop.

Meat Inspection Personnel

There are no veterinary officers employed by the Ministry of Health; the only Government department which employs veterinary officers is the Ministry of Agriculture. In the larger centres veterinary officers of the Ministry of Agriculture could be employed whole time on meat inspection. Veterinary surgeons by their basic training are the only members of the community who can claim to have the scientific training required by expert meat inspectors. Meat inspection is, in the vast majority of cases, entrusted to sanitary inspectors, some of whom have taken a short course in meat and other foods, and many of whom, with experience, make very efficient meat inspectors and detection officers. Veterinary surgeons, however, with their more prolonged and more extensive initial training, are obviously better equipped to make more efficient meat inspectors, providing they are given opportunities to acquire the necessary experience.

In Ireland, meat inspection is carried out by Government veterinary officers, who not only are concerned with the fitness of meat for human consumption but also act as meat graders, and this arrangement has worked with marked success.

With the exception of England and Wales, meat inspection practically throughout the whole world is carried out by, or under the direct supervision of, veterinary surgeons. The sanitary inspector has a variety of duties to perform, and if he is employed by a local authority on general duties, as are the great majority, he has little time for specialisation in meat inspection, being mainly employed in the inspection of dwelling houses, factories, etc., and usually "meat inspection" merely involves deciding whether the meat is fresh or has become decomposed. There is a strong feeling among those engaged in meat inspection, and the business of slaughtering, that the training of a sanitary meat inspector could, with advantage, be considerably improved, more emphasis being laid on the subjects connected with actual meat and food inspection, and less upon building construction, etc. If slaughtering and the inspection of the animals and carcases were carried out under the supervision of a Government department, sanitary inspectors trained on the present lines as meat inspectors would become redundant and these inspectors could

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CLINICAL COMMUNICATION

Intussusception of the Colon in a Bovine *

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Subject.—Fourteen-year-old Lincoln Red cow.

History.—The animal, which had calved normally three weeks previously, was seen by the owner on the evening prior to being found dead; he noticed that she was "a bit off colour" and recumbent.

She had been housed with several other beasts in an open straw-yard on a diet consisting mainly of straw chaff, beet pulp and potatoes.

Post-mortem Examination.—The contents of the abdominal cavity were examined next day at the knackery.

An acute congestion of the colon about a yard from the ileo-caecal valve was at once obvious. It appeared at first to be a "twist," but frustrated all attempts at manual correction.

On opening the gut a little posterior to the obstruction, some 12 inches of intussuscepted colon was repelled forwards, the colon thereupon resuming its normal shape. Incision of the congested area revealed a solid clot of extravasated blood covered by the detached mucous membrane, which completely filled the colon for a distance of some 18 inches.

It must be noted that the colon at the site described showed a marked diminution of the lumen, at a point where it formed a flexure with a very short mesenteric attachment. These were taken as factors predisposing to the intussusception of the wider and more free anterior portion into that succeeding it.

The attendant knackerman declared the case to be unique in 40 years' experience.

* Case recorded while seeing practice with Messrs. J. H. & S. G. Poles, MS.R.C.V.S., Whittlesey.

ABSTRACTS

[Ascites and a New Treatment.- Editorial. (1946.) *N. Amer. Vet.* **27**. 678-682.]

A number of factors may be responsible for the development of ascites in cases of cirrhosis of the liver. Firstly, the cirrhosis may cause congestion of the portal system, and thus, by raising the hydrostatic pressure in the capillaries, increase the force driving fluid through their walls in opposition to the colloid osmotic pressure of the plasma. This osmotic pressure is largely due to the plasma albumin and as this is probably manufactured only in the liver, there may in cases of cirrhosis be inadequate synthesis and a consequent fall of osmotic pressure due to hypoproteinaemia. The permeability of the capillary walls, particularly as regards protein, may at the same time be increased by damage to the endothelium by the slowing of the blood flow.

However, it is well known that not all patients with cirrhosis of the liver develop ascites, and further, that ascites is not always present in cases of hypoproteinaemia. Another possible factor that may be concerned in the production of ascites has been illustrated in work by Raffi *et al.* [(1945) *J. Clin. Invest.* **24**. 316-325], who were able to demonstrate in the urine of human patients with cirrhosis and ascites a substance which had an antidiuretic effect when tested in rats. There appeared to be some correlation between the degree of ascites present and the antidiuretic activity of the urine. It was suggested that this antidiuretic substance was possibly a hormone of posterior pituitary origin which was normally inactivated in the liver, and it seemed probable that in patients with cirrhosis but without ascites, the liver was still able to inactivate the antidiuretic substance, while it had lost this function in cases with ascites. In this connection, it has been reported that a liver suspension may inactivate the antidiuretic hormone of the pituitary.

In presenting this theory, Ralli *et al.* also reported the results of treatment of ascites in nine human patients, who had a history of chronic alcoholism extending over a period of years, and who had ascites and damaged livers. These patients were given a high protein diet, and also two or three times weekly, intravenous injections of a special liver extract. In six of the nine treated, the severe ascites was arrested so that after varying periods of time paracentesis could be discontinued; two of the patients died during the period of study, while the remaining patient continued to accumulate ascitic fluid.

E. C.

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[The Development of the Dog Ovary from Birth to Six Months of Age. Rapps, G. (1948.) *Amer. J. vet. Res.* **9**. 61-64.]

The ovaries of 37 bitches, whose ages ranged from two days to six months, were examined histologically. Primordial oöcytes surrounded by follicle epithelial cells were observed in ovaries from pups four days old, while true primary follicle formations with granulosa cell development from the follicle cells were seen in 15 day specimens. The granulosa became stratified at 15 weeks and antrum formation was evident at six months. The germinal epithelium underwent cyclic changes alternating between cuboidal and squamous cells. The tunica albuginea reached its greatest development in early life and no evidence was obtained to indicate that it might regulate the formation of ova.

A. T. C.

REVIEW

[The Right Way to Keep Dogs. By R. C. G. Hancock, B.SC., M.R.C.V.S. Illustrations by Eileen Hancock. Pp. 109+viii. Right Way Books: Andrew George Elliott, Glade House, Kingswood, Surrey, and The Rolls House Publishing Co., Ltd., 2, Breams Buildings, London, E.C.4. Price 5s.]

This book is intended for the novice dog owner or for anyone contemplating acquiring a pup for the first time. Much useful advice is contained therein, including the choice of breed, feeding, housing, training, etc.

That the author is more used to country dog owners is obvious from his recommendation of the Cocker Spaniel and Retriever as suitable companions; few urban practitioners will agree with either choice for town households.

Breeders will scarcely agree with all the advice given on breeding, but as the book is intended more for the novice this is of little moment, as also is the bias shown (and admitted) by the author in the chapter on dog shows. Certain of the information in this chapter is inaccurate.

A most useful section deals with the law as applied to dogs, but the accuracy of the statement that a police constable can, on the certification of a veterinary surgeon, order the destruction of an injured or diseased dog against the owner's consent must be questioned.

The section dealing with disease is wisely kept to a superficial statement concerning the more common accidents and ailments likely to be encountered by the dog owner. The necessity for professional diagnosis in nearly every case is stressed.

The book is illustrated by some charming scraper-board drawings by the author's daughter.

As a footnote to this notice we may perhaps be allowed to express mild surprise at the use of the description "Radio Vet." on the title page, being under the impression that this term had been adopted as a means of preserving anonymity.

Toxic Cells in Blood Examination.—Asserting that, in haemograms reported by veterinarians, there is little reference to neutrophiles (toxic cells) that have undergone changes in morphology, W. N. Konde, of Birmingham, Michigan, contributes a useful study, with associated clinical data, to the April issue of the *North American Veterinarian* (**29**, 4, 225-229). The article contains much helpful information in support of the author's contention that the inclusion of toxic cells and a degenerative index in a haemogram, is of value in the diagnostic assessment of the degree of toxic reaction in the marrow, and is thus well worth perusal in the original.

* * * * *

The belief is growing among racehorse trainers that one of the secrets of the extraordinary stamina and vitality of some of the French horses which have been running away with the trophies in England of late years, is that they are grazed on young leys, and on seeds hay.—*Farmers' Weekly.*

be replaced by sanitary inspectors trained specifically for meat inspection purposes, together with recruits from the meat trade itself, who had undergone a course of training similar to that required for the diploma of the National Federation of Meat Traders, supplemented by a special course in meat inspection.

Questions and Answers

The submission of questions for inclusion in this column will be welcomed: they can relate to any aspect of veterinary work. For purposes of record, each question is numbered, and those submitting questions are required to furnish (not for publication) name and address.

Answers to readers' queries represent exclusively the personal opinions of the writers, and criticism of the replies will be appreciated.

All communications should be addressed to the Editor.

Castration of Cart Colts

Q. CCXXXVI.—*What do you consider the easiest way and most humane method of castration of cart colts? Will you particularly emphasise the method of restraint you would adopt?*

A.—In the present writer's opinion the fact that the profession as a whole tolerates and largely practises the castration of equines of any age in the standing position and with no anaesthetic completely stultifies its claim to be the protector of the animal kingdom against quackery and cruelty. The easiest and most humane method of castrating cart colts is to chloroform standing. The colt is haltered and the mask (which should have a zip fastener) is put on; it may be necessary to apply a twitch and pass the mask up it. Chloroform, 1½ to 2 oz., according to the size and age of the colt, is given, and the colt allowed to move in circles. A single or double side-line is applied either when a state of narcosis is reached, or when anaesthesia is complete and the colt recumbent. In either case, it is sufficient to draw up one hind leg (the off if the operator is right-handed, the near if left-handed) to expose the site of operation. The writer always uses a Hausmann-Dunn emasculator and has found it satisfactory for horses of all ages. Unless the emasculator is used very hot, straight from boiling, the crushing surfaces should be greased, to prevent the edges of the vessels sticking to them, and so being drawn apart as the emasculator is removed.

Granted competent assistance, the whole operation should not require more than 15 to 20 minutes.

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Ventral Hernia in the Cow

Q. CCXXXVII.—*What is the operative technique, prognosis and post-operative treatment in a case of ventral hernia (in a Jersey cow) which is antero-lateral to the umbilicus and has a ring admitting four fingers?*

A.—Operative measures in this case should aim at the restoration of the original anatomical relationships, if this is possible. This entails reduction of the hernia and repair of the breach in the abdominal wall.

Ventral herniae of the type described usually occur at the lateral border of the Rectus Abdominis muscle and are generally due to direct injury or to developmental defects, or a combination of both.

As a general rule clams or ligatures cannot be applied because the hernial sac is not well defined. The radical operation is, therefore, to be preferred.

The sac is opened over its centre, going through the skin and the fibrous layer. The thin peritoneal lining of the sac is isolated and separated from the wall. The hernia now is carefully reduced, and the peritoneal lining is grasped with a long artery or spring forceps and twisted into a cord. A ligature is applied to the neck of this cord as close to the hernial ring as possible and the free portion is cut lateral or external to the ligature. The stump (with the ligature) is returned to the abdomen. The closure of the hernial ring may be carried out in a number of ways. (1) The edges may be freshened and brought together by strong interrupted sutures; (2) Everted sutures may be used, or (3) the "Vest over pants" overlap method may be adopted and is quite successful. By this method the upper border of the hernial ring is made to overlap the lower border. The skin is satured separately.

The peritoneal lining of the sac may be ruptured as well as the muscles, in which case after the hernia has been reduced the rent in the muscles is sutured as before.

The prognosis is good, except when the hernia is close to the costal arch or last rib, in which case respiration causes excessive tension on the cicatrix and possible separation and recurrence of the condition. Also if the hernial ring is very large the hernia may recur.

The post-operative treatment is the usual for deep sutured wounds. A pad and bandage may be applied if it can be maintained. Remove stitches in nine to ten days. Keep the animal quiet and on a good nutritive and laxative diet.

"So-called 'Milk Fever' of Sows"

Q. CCXXXVIII.—*Is the aetiology of the so-called "milk fever" of sows similar to that of milk fever in the cow? If so, is the exhibition of calcium indicated? What other therapeutic measures are of value?*

A.—Milk fever occasionally occurs in sows and appears to have a similar aetiology to that of the cow, but it is much less common. Differential diagnosis must be made from the condition known as post-parturient fever. In true milk fever the first symptoms, which may occur any time within the first seven days after farrowing, consist of diminished appetite and some uneasiness followed by general collapse. The sow becomes unable to rise, shows no evidence of fever and although not necessarily comatose takes little interest in her surroundings or in her progeny and refuses food. The udder invariably becomes hard and the young pigs are unable to draw milk. If left untreated coma develops and is followed by death. In post-parturient fever, which may occur two or three days even after a normal parturition, similar symptoms of dullness and anorexia occur and the udder also becomes hard as if engorged with milk; the piglets become hungry. In this latter disease, however, a consistent symptom is an elevated temperature of 106° or 107°.

True milk fever in sows rapidly yields to the parenteral administration of calcium borogluconate. Inflation of the udder with air is almost impossible owing to the teats having more than one orifice. No other therapeutic measures are indicated in view of the spectacular response to calcium therapy; nevertheless, the response of post-parturient fever to pituitrin is equally spectacular.

QUESTIONS IN PARLIAMENT

Agricultural County Committees (Scientific Advice)

Lieut.-Colonel Bromley-Davenport asked the Minister of Agriculture for what reason he has recently removed from county agricultural executive committees those members who have hitherto represented independent scientific opinion; and what arrangements will be made henceforward to ensure that county agricultural executive committees have adequate scientific advice of an independent nature.

Mr. T. Williams: Changes in the constitution and functions of county agricultural executive committees brought about by the Agriculture Act have, unfortunately, made it impossible for me to find room on the new committees for all the scientists who served on the war committees, though I am glad to say that there are still a number of committees which contain an agricultural scientist. Committees are at liberty to invite scientists to serve on their sub-committees; and many of them have done so. As a result, several scientists who were formerly on executive committees are now serving on sub-committees, so that their advice is still available to committees. Further, the National Agricultural Advisory Service and the other technical services of my Department are available to provide committees with scientific advice and guidance.

NATIONAL MILK RECORDS SERVICE

The 1947 report of the above Service, presented at the recent annual meeting, shows that 20,129 producers (18,876 in the senior scheme and 1,253 in the junior scheme) were recording their herds last September.

In ten years there has been a fourfold increase in recording—the percentage of all dairy cows in England and Wales recorded for milk yields during the last recording year is 19—and a tenfold increase in butterfat testing.

The average yield of recorded herds (all breeds) was 7,040 lb., based on the lactation yield. For cows, the average was 7,390 lb. and for first-calf heifers 6,226 lb.

The report states that while there is "considerable satisfaction to be felt at the general average of yields, there remains a great deal to be done to raise the performance of a high proportion of even the milk-recorded cows," and it continues:

"These are, after all, the leading group—or the 'advance guard'—of the milk producing industry. It is to be hoped that by a continuation and extension of milk recording, progress will continue to be made, and that the performance of animals will show a greater degree of uniformity at a high level."

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Weekly Wisdom

Technical knowledge imposed on a narrow outlook breeds false ambition.—Francis Donaldson in *The Countryman.*

NOTES AND NEWS

Diary of Events

May 10th.—Entries due for D.V.S. Examination.
May 10th.—First of the Animal Health Trust 1948 Fison Lectures, by Dr. L. Seekles, University of Utrecht, at Kingsway Hall, W.C.2, 2.30 p.m. (See Notice).
May 11th.—Scientific Meeting of the Zoological Society of London, Regent's Park, N.W.1, 5 p.m.
May 12th.—Second and third (concluding) A.T.H. 1948 Fison Lectures, by Dr. L. Seekles. (See Notice).
May 14th.—R.C.V.S. Voting Papers issued.
May 18th.—R.C.V.S. Pharmacology, etc., Examination (revised syllabus).
May 19th.—Meeting of the Editorial Committee, N.V.M.A., at 36, Gordon Square, W.C.1, 2.30 p.m. (*Please note postponement from May 12th*)
May 20th.—Annual Meeting of the Dumfries and Galloway Division, N.V.M.A., at Carlisle (Crown and Mitre Hotel), 11.15 a.m.
May 21st.—Spring Meeting of the Eastern Counties Division, N.V.M.A., at Bury St. Edmunds (Angel Hotel), 2 p.m.
May 21st.—Meeting of the Sussex Division, N.V.M.A., at Brighton (Old Ship Hotel), 2.30 p.m.
May 22nd.—Whole-day Meeting of the Society of Women Veterinary Surgeons at the Experimental Farms of Messrs. J. Bibby & Sons, Ltd., in the Wirral, Cheshire. (See Notice.)
May 25th.—R.C.V.S. Voting Papers to be returned.
May 27th.—Annual Meeting of the Society of Veterinary Practitioners, at the Holborn Restaurant, W.C.2, 2.30 p.m.
May 27th and 28th.—Meetings of the Veterinary Hygiene Section of the Royal Sanitary Institute's Congress at Harrogate. (See Notice.)
May 29th.—Meeting of the Biochemical Society at Oxford (Department of Biochemistry, University Museum), 1 p.m.
June 1st.—R.C.V.S. Annual General Meeting.
June 1st.—V.V.B.F. Annual General Meeting.
June 7th-8th.—R.C.V.S. D.V.S.M. Written Examination.
June 11th.—R.A.V.C. Annual Dinner, Grosvenor House, London, W.
June 24th-25th.—R.C.V.S. Membership Written Examinations.
June 30th.—July 2nd.—Meetings of Council and Committees, N.V.M.A., in the Royal (Dick) Veterinary College, Edinburgh.

Sept. 8th to 15th (inclusive).—N.V.M.A. Congress at Southport.

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The Veterinary Surgeons Bill, 1948

A statement will be published next week, by the Royal College of Veterinary Surgeons, on the progress of the Bill, and with special reference to the title "Veterinary Practitioner."

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Committee Stage in the Lords

TITLE "VETERINARY PRACTITIONER" TO STAND

The Committee stage of the Veterinary Surgeons Bill passed through in a strikingly friendly atmosphere in the House of Lords on Tuesday last, about 40 Peers being present.

Earl De La Warr moved an amendment that the unqualified persons to be put on the new Register be called either "Animal Practitioner" or "Practitioner in Animal Diseases." This was strongly urged, and equally strongly resisted by the Government, who made it clear that it was their intention to adhere to the title "Veterinary Practitioner." In consequence, the amendment was withdrawn by Earl De La Warr.

A number of amendments were accepted by the Government, including that urged upon it by the Royal College, deleting the word "minor" before "operation" in Clause 5, thus qualifying "test," also, by the word "minor." This in effect means that only a minor test can be carried out by an unqualified person.

The effect of another accepted amendment, originated by the Royal College, is that no unqualified person can castrate any animal after it has reached the following age: horse, pony, ass or mule—2 years; bull, goat, ram—15 months; boar—9 months; cat and dog—6 months. In intimating Government acceptance of this amendment, Lord Huntingdon said that he was happy to announce that it had been agreed with the National Farmers' Union.

A full report of these proceedings will appear in our next issue.

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Animal Health Trust Fison Lectures

We would draw the attention of all those of our readers for whom attendance is possible, to the announcement in our Notices Columns of the 1948 series of Fison Lectures, to be delivered under the aegis of the Animal Health Trust, at the Kingsway Hall on May 10th and 12th, by the distinguished veterinary biochemist, Dr. L. Seekles, of the University of Utrecht. Dr. Seekles takes as his general theme certain important disorders of cattle and it is believed that these lectures will be helpful to veterinary practitioners and others. The Duke of Norfolk will preside at the first lecture and the President of the N.V.M.A., Mr. L. Guy Anderson, at the second, while it is hoped that the President of the Royal College, Mr. H. W. Dawes, will take the chair at the third. Admission is free, without ticket.

* * * * *

Town and Country Planning Acts, 1932-44

The Registrar of the Royal College of Veterinary Surgeons was consulted by a member who had taken a house in a high-class residential district, for the purpose of residence and for consulting rooms and surgery for small-animal patients. The proposed alterations to the interior in no way caused the house to differ as to the exterior from any other house in the area. It was intended that no animals should be kept on the premises. Doctors and dentists already had surgeries and consulting rooms in similar houses in the area.

The member made an application for permission to use part of his house as a Veterinary Surgery. The local authority refused on the grounds:—

> "That the premises are situate in an area tentatively zoned in a draft scheme in the course of preparation for residential user, and the proposed use would not conform with this zoning and is considered inappropriate, and would be likely to affect adversely the residential amenities of the properties in the immediate neighbourhood."

After this refusal, the Registrar took up the matter with the local authority concerned, and in the course of a long letter included the following paragraphs:—

> "The question at issue would appear to be important both to the community as a whole and to the veterinary profession. Whilst it is appreciated that the Town and Country Planning Acts and the Orders thereunder exist for the benefit of the community, one of the desires of a very large part of the individual citizens who form the community is to have small pets. The provision, therefore, of consulting rooms where the small animals of citizens may be taken for treatment is an integral part of the general welfare of the very community which the Town and Country Planning Acts are designed to protect.
>
> "Such a consulting room in the case of small animals does not differ from the consulting room of a registered medical practitioner, nor of a registered dentist, to which, I believe, exception is not generally taken when contained within the residence of a practitioner, although such residence may be within the zone as defined in your letter of refusal of the ——.
>
> "May I, therefore, respectfully request that the application be reconsidered from the point of view which I have indicated in this letter, it being not one isolated case but rather a matter of general principle.
>
> "In your reconsideration of this matter I would point out that the applicant is the member of a profession and not of a trade, and that his application may be considered not only from the point of view of justice to the applicant, but also from the greater point of view of the needs and general good of the community which he serves.
>
> "I am to ask if you would be so good as to indicate whether any general principles are considered especially applicable to veterinary surgeons in the exercise of any discretion under the above Acts and Orders."

The local authority reconsidered their decision, and allowed the use of the premises for a Veterinary Surgery subject to various conditions, and stated:—

"I have been directed to inform you that it has been the practice of the Council to allow the use of residential buildings by doctors and dentists and other similar professional users with consulting rooms and where appropriate staff is employed, provided that the remainder of the building is in their private residential occupation, and where the professional use is a normal and ancillary service to a residential area. Each case is considered on its merits, and sympathetic consideration would be given to any further application where it is proposed to use a residential building as a private residence and surgery of a veterinary surgeon, but the Council would require to be satisfied that the proposed use would not cause any nuisance to adjoining owners."

The Registrar feels that an important principle has been established within the area of this local authority, and that the decision and the principle could be used within the area of other town planning authorities if need be.

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Tuberculosis (Attested Herds) Schemes

STATEMENT SHOWING POSITION OF "ATTESTED HERDS" IN EACH COUNTY AS AT MARCH 31ST, 1948

County	Total Cattle as at 4.6.47	Certificates of Attestation in force as at 31.3.48	Number of Cattle covered by Certificates of Attestation as at 31.3.48	Percentage of Attested Cattle to Total Cattle
ENGLAND				
Bedford	45,187	59	3,740	8·3
Berks	79,656	337	20,106	25·2
Buckingham	106,371	172	10,730	10·1
Cambridge	29,310	60	3,626	12·4
Isle of Ely	18,937	15	686	3·6
Chester	235,479	289	16,463	6·9
Cornwall	250,224	256	10,023	4·0
Cumberland	209,000	853	42,673	20·4
Derby	178,926	127	7,375	4·1
Devon	374,657	416	17,889	4·8
Dorset	137,196	410	24,103	17·6
Durham	111,203	255	11,331	10·2
Essex	120,106	365	19,561	16·3
Gloucester	174,888	277	16,323	9·3
Hampshire	139,381	454	24,488	17·5
Isle of Wight ..	19,992	36	1,669	8·3
Hereford	125,017	204	11,894	9·5
Hertford	57,286	164	11,867	20·7
Huntingdon	27,631	21	1,754	6·3
Kent	147,619	268	13,879	11·8
Lancaster	267,975	323	15,439	5·7
Leicester	154,580	117	6,865	4·4
Lincoln (Holland) ..	25,769	—	—	—
Lincoln (Kesteven) ..	67,455	12	675	1·0
Lincoln (Lindsey) ..	156,173	34	1,790	1·1
London	120	—	—	—
Middlesex	7,024	17	1,036	14·7
Norfolk	171,977	234	17,796	10·3
Northampton	145,281	68	4,323	3·0
Soke of Peterborough	7,082	—	—	—
Northumberland ..	181,836	210	12,111	6·7
Nottingham	107,240	77	3,894	3·6
Oxford	97,376	357	19,634	20·2
Rutland	20,071	11	625	3·1
Salop	261,162	312	19,708	7·5
Somerset	297,602	563	31,192	10·5
Stafford	223,893	119	6,127	2·7
Suffolk, East	75,125	105	6,066	8·1
Suffolk, West	34,021	97	6,611	19·4
Surrey	49,448	235	12,347	25·0
Sussex, East	100,836	244	11,196	11·1
Sussex, West	67,241	192	9,986	14·9
Warwick	144,176	143	8,963	6·2
Westmorland	90,754	677	30,814	33·9
Wilts	183,626	281	19,861	10·8
Worcester	93,899	101	6,122	6·5
York, East Riding ..	124,949	32	1,186	0·9
York, North Riding ..	231,274	435	16,390	7·1
York, West Riding ..	329,835	436	18,856	5·7
TOTAL, ENGLAND ..	6,275,866	10,470	559,813	8·9
WALES				
Anglesey	53,766	33	1,398	2·6
Brecon	43,363	148	5,302	12·2
Caernarvon	58,435	130	4,786	8·2
Cardigan	70,699	3,396	52,408	74·1
Carmarthen	124,842	4,248	83,863	67·2
Denbigh	95,340	397	10,712	11·2
Flint	57,897	66	3,108	5·4
Glamorgan	70,704	160	4,468	6·3
Merioneth	38,851	860	16,647	42·8
Monmouth	63,949	119	5,336	8·3
Montgomery	90,615	335	12,365	13·6
Pembroke	95,126	1,612	34,924	36·7
Radnor	35,159	46	1,182	3·4
TOTAL, WALES ..	898,746	11,550	236,499	26·3
TOTAL, ENGLAND AND WALES	7,174,612	22,020	796,312	11·1
SCOTLAND				
Aberdeen	206,252	121	11,517	5·6
Angus	58,018	81	8,539	14·7
Argyll	59,974	428	15,581	26·0
Ayr	144,734	1,993	120,854	83·5
Banff	50,072	27	1,991	4·0
Berwick	29,164	35	2,435	8·3
Bute	10,446	329	8,747	83·7
Caithness	24,667	135	2,325	9·4
Clackmannan	4,295	25	1,707	39·7
Dumfries	94,113	1,120	62,000	65·9
Dunbarton	16,046	171	9,140	57·0
East Lothian	14,057	23	2,059	14·6
Fife	57,845	208	14,329	24·8
Inverness	50,261	52	2,822	5·6
Kincardine	33,736	32	2,885	8·6
Kinross	7,749	39	1,758	22·7
Kirkcudbright	69,070	645	43,751	63·3
Lanark	90,691	1,000	56,562	62·4
Midlothian	22,157	138	6,750	30·5
Moray	27,775	39	3,096	11·1
Nairn	7,923	14	1,019	12·9
Orkney	45,301	146	3,384	7·5
Peebles	10,564	126	5,501	52·1
Perth	81,639	160	10,933	13·4
Renfrew	30,780	292	17,195	55·9
Ross-shire	36,928	34	1,671	4·5
Roxburgh	30,545	36	2,139	7·0
Selkirk	5,268	24	948	18·0
Stirling	39,488	282	15,130	38·3
Sutherland	9,559	11	398	4·2
West Lothian	14,213	90	4,617	32·5
Wigtown	67,666	439	41,457	61·3
Zetland	7,608	1,945	6,566•	100·0
TOTAL, SCOTLAND ..	1,458,604	10,240	489,806	33·6
TOTAL, GT. BRITAIN	8,633,216	32,260	1,286,118	14·9

• All cattle herds in Zetland are Attested. This figure represents the number of animals in the last test of the herds.

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PERSONAL

Births.—LESLIE.—On April 25th, 1948, at 6, Market Crescent, Castle-Douglas, to Josephine, wife of G. D. Leslie, M.R.C.V.S., a son—Andrew Gordon.

MACDONALD.—On April 19th, 1948, to Norah (née Talbot) wife of John Macdonald, M.R.C.V.S. (late R.A.V.C.) Colonial Service, Uganda, a second son—James.

RIX.—On March 14th, 1948, at Lusaka, N. Rhodesia, to Jean, wife of Lt.-Col. J. C. Rix, T.D., M.R.C.V.S., a son—David.

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Colonial Veterinary Service Appointments.—The following appointments are announced:

Mr. Hugh A. Hay Barclay, M.R.C.V.S., D.V.S.M., Senior Veterinary Officer, Nigeria, as Regional Assistant Director of Veterinary Services, Nigeria; Mr. A. Fulton, M.R.C.V.S., Senior Veterinary Officer, Gold Coast, as Director of Veterinary Services, Sierra Leone/Gambia; Mr. L. R. Hutson, Chief Veterinary Officer, Leeward Islands, as Veterinary Officer, Department of Science and Agriculture, Barbados; Mr. J. W. Macaulay, B.SC., M.R.C.V.S., D.V.S.M., Veterinary Research Officer, Northern Rhodesia, as Senior Veterinary Research Officer, Northern Rhodesia; Mr. J. Morton, M.R.C.V.S., Veterinary Officer, Nigeria, as Regional Assistant Director of Veterinary Services, Nigeria, and Mr. H. G. Stewart, M.R.C.V.S., D.T.V.M., Veterinary Officer, Uganda, as Senior Veterinary Officer, Uganda.

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A Royal Academy Portrait.—An interesting and pleasing feature of this year's Royal Academy Summer Exhibition is Herbert Holt's excellent portrait of Dr. W. R. Wooldridge, M.SC., M.R.C.V.S., Scientific Director of the Animal Health Trust. Exhibit 442, it will be found in Gallery No. VII.

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Bovine Mastitis

RESULTS OF CONTROL TRIALS

At the meeting of the Farmers' Club on April 5th, the subject for consideration was bovine mastitis.

Professor Dalling opened, preparing the way for the subsequent paper by Dr. Stableforth who dealt with the more recent experimental aspects of the disease with which he has been personally associated. Much of the information supplied by both speakers is already well known to veterinary surgeons, but a few points are

worthy of reiteration and there are some which will come as new and original in this wide field of study.

Strep. agalactiae is considered to be confined largely to the udder, both inside and outside, especially the teats, and is not harboured in other organs or tissues as are certain other organisms associated with other types of mastitis. In the other streptococcal forms, infection also occurs from udder to udder, but these streptococci are at times found in such sites as tonsils, vagina and uterus, from which it would be difficult to eradicate them. The freeing of the cow's udder and teats from all *Strep. agalactiae* infection, coupled with the thorough disinfection of the outside of her body and everything with which the infection may have come into contact, should prevent further infection of the udder at a later date unless she is exposed to such infection. With other types of infection, including other streptococci, the control of mastitis cannot be so simple because there is always a chance of the infective organisms being present in other tissues of the cow from which they can be discharged at any time and so become a source of further re-infection of the udder.

The method by which infection enters the udder is the teat canal. Attempts to set up infection in other ways, such as by feeding the animal or injecting it under the skin or into the blood, have been uniformly unsuccessful, whereas the disease can be set up fairly regularly by injection into the teat canal and also, by milking with infected hands. The introduction of a new animal harbouring *Strep. agalactiae* is fatal to any scheme of control, following her introduction to the herd, for it is then only a matter of time until infection again becomes established in the herd. Any previous infection will not have provided sufficient immunity to avoid this mishap.

Up to the present day penicillin has proved itself in the field to be the most suitable agent for treatment though certain types of infection may respond better to sulphone, more especially those in dry cows. It may be that a still more effective agent will be discovered in the near future. The most satisfactory agent for the removal of streptococcus infections from the udder at the present time, is, however, penicillin, and since it became available a great deal of work has been done in this and other countries in order to find out the most economical and efficient method of administration. Single doses may remove clinical symptoms, but do not sterilise more than 30 to 50 per cent. Two doses of 20,000 units bring about some 70 per cent. of complete cures; that is to say, the infection is sterilised. Work is still in progress on extended courses of treatment with the object of getting as near a 100 per cent. as possible, and many hundreds of cows have been treated in this way. They show that well over 90 per cent. of infections with *Strep. agalactiae* can be removed by means of five daily treatments of 100,000 units into every quarter. [This seems rather out of practical range on the commercial dairy farm.—*Editor.*]

Methods of control may be divided into the treatment of individual animals when such cases arise, the testing of the whole herd, and the treatment of all carriers, or the treatment of all the herd irrespective of whether animals are carriers, infected or normal. The significance of hygienic conditions, milking routine and the need to have the full co-operation of the cowshed personnel in relation to mastitis eradication and control were stressed.

Of recent times many cases have been encountered in which no bacteria can be incriminated and we must look in this instance to the environmental factors for the explanation.

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Royal Veterinary College and Hospital

The recently issued Annual Report of the Royal Veterinary College for the year ended September 30th, 1947, opens with an expression of deep regret at the death of the Earl of Harewood, a Vice-President of the College.

During the session 100 new students were admitted and 16 students returned from the Forces, making a total of 116, as compared with 103 new students and 27 students returned from the Services, total 130, in the session 1945-46. The total number of students at the beginning of the session was 428, the number for the previous year being 370.

At the examinations held by the Royal College of Veterinary Surgeons in December, 1946, 150 students presented themselves for examination and 109, or approximately 73 per cent., passed, and at the examinations held in July, 1947, 337 students presented themselves and 253, or 75 per cent., passed. Fifty-five obtained the Diploma of Membership of the Royal College, as compared with 60 the previous year. The number of students preparing for the B.Sc. (Veterinary Science) degree in October, 1946, was 85 enrolled in all years, compared with 84 in 1945.

A number of ex-Service graduates have asked for, and have received refresher courses in various departments of the College.

A wide field of research is covered both by the College departments and by the Research Institute of Animal Pathology.

At the Beaumont Animals' Hospital, attendances numbered 16,607 compared with 16,708 the preceding year, and 13,683 in 1938.

Following is the list of Staff Appointments during the period under review:—

E. C. Amoroso, M.D., D.SC., PH.D., B.CH., B.A.O., Chair of Physiology; J. T. Abrams, M.SC., PH.D., Lecturer, Biochemistry; P. R. Blair-Fish, B.SC., M.R.C.V.S., House Surgeon, Steyning Practice; G. C. Brander, B.SC., M.R.C.V.S., Lecturer, Medicine; E. Cotchin, M.R.C.V.S., Reader, Pathology; J. Hickman, M.R.C.V.S., Reader, Surgery; P. L. Ingram, B.SC., M.R.C.V.S., Demonstrator, Physiology; F. T. W. Jordan, B.SC., M.R.C.V.S., Demonstrator, Bacteriology; Mrs. D. Z. King, B.SC., Demonstrator, Biology; I. L. Martin, M.R.C.V.S., Demonstrator, Surgery; P. Scott Dunn, M.R.C.V.S., Demonstrator, Animal Husbandry; G. W. Serth, M.R.C.V.S., Lecturer, Medicine; N. J. Scorgie, M.A., B.SC., M.R.C.V.S., Courtauld Chair of Animal Husbandry, Veterinary Hygiene and Dietetics; Miss I. P. Vivian, M.R.C.V.S., House Surgeon, Beaumont Animals' Hospital; A. G. Warren, M.R.C.V.S., Demonstrator, Animal Husbandry; G. Williams, M.R.C.V.S., Demonstrator, Medicine; G. A. Willis, B.V.SC., M.R.C.V.S., Lecturer, Animal Husbandry.

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R.C.V.S. Central Library for Animal Diseases

We are asked to announce that the Central Library for Animal Diseases, 10, Red Lion Square, London, W.C.1, will be closed from May 8th to 17th inclusive. Arrangements have been made, however, for urgent requests to receive attention.

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ADDRESSES OF DISEASE-INFECTED PREMISES

The list given below indicates, first, the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

SHEEP SCAB:

Cumberland.—Hyton Farm, Bootle, Cumberland (April 24th); Town Head Farm, Greysouthern, Cockermouth, Cumberland (April 30th).

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SLAUGHTER OF CASUALTY STOCK

The shortcomings of the Livestock (Restriction of Slaughtering) Order of 1940 and the need for its immediate revision were, says the *Meat Trades Journal*, points raised by Mr. Morley T. Parry, the Chief Sanitary Inspector to the Northampton Corporation, at a sessional meeting of the Royal Sanitary Institute, at Northampton.

Whilst the Order had succeeded in its main object, he said, it had failed in many respects and mainly in the way in which the unrestricted trading was being abused, the easy contravention of the proviso allowing casualty slaughter, the valueless check of district chairmen of auctioneers in dealing with casualty animals, and the absence of control in the disposal of meat from knacker yards.

Animals which were rejected as ungradable at the collecting centres of livestock were, he asserted, immediately sold to so-called dealers, many of whom had neither land nor grazing rights. Hundreds of that type of cattle were transported from market to market, usually to semi-urban collecting centres near industrial zones, where grading standards were not so high, in the hope of getting them accepted. If that failed the animals were sent to the killing centres as "casualties."

There was no legal requirement of a veterinary surgeon's certificate supporting a casualty's illness, with the result many animals were admitted as casualties. Further, casualty delivery notes were issued without proper and efficient enquiries by auctioneers, and in some instances they were rubber-stamped documents issued by very junior employees.

Unscrupulous knackers could deal in reject cattle and could devote certain trading days to the sale of meat which they considered free from all disease and which was killed in rural knacker yards.

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SHORT-TERM LEYS, MINERAL DEFICIENCIES, AND STOCK AILMENTS

In the address briefly reported in our issue of March 13th, Mr. Steele Bodger, M.R.C.V.S., posed the problem of the possible relation between physiological infertility and modern husbandry. In a letter to the *Farmer and Stock-Breeder* of April 6th, Mr. Francis A. Davidson, B.SC., M.R.C.V.S., gives his view of short-term leys and mineral deficiencies as possible factors in certain disorders of livestock, quoting from practical and experimental experience.

Short-term leys (writes Mr. Davidson) have recently formed a

major part of agricultural discussions and, as with other discoveries, their development has outstripped our knowledge of both their advantages and dangers. Bloat, "grass sickness" in horses, mineral deficiency, and infertility, have all been attributed, rightly or wrongly, to this type of pasture.

Recently, Professor Scott Watson pointed out that short leys have been the vogue in parts of Scotland for as long as many of us can remember with no evidence of these dangers. I stated a few weeks ago when discussing "grass sickness," that it should be realised that ley farming in N.E. Scotland formed a definite part of a rotation of oats, roots, oats or barley undersown, hay and two years' grazing.

In my youth I understood that, in our particular area, this was necessary to ensure a healthy turnip crop. Especially on marginal land, the plough kept the heather, etc., out. In the Midlands of England leys have been used to reclaim derelict pasture, rough grazings, etc., by direct reseeding or after one or more cereal and potato crops, the manure being almost entirely inorganic, with a high percentage of lime and nitrogen, plus the ploughing in of an old pasture and oat stubble; whereas in the N.E. rotation there was at least one heavy application of farmyard manure, a third year clover ley and each season inorganics compounded to suit the crop, special attention being paid to phosphates and potash.

We have before us daily the effects of rations based on what were assumed to be complete analytical data, with failure of animals to utilise fully many of the ingredients, lack of trace elements, etc., resulting in many troubles among stock, especially those which are subclinical and therefore unobserved for varying periods.

Has a similar situation developed with ley farming as now practised? Do the manures, especially the dung, of the N.E. rotation give a more complete pasture?

Steele Bodger's remarks *re* infertility, etc., probably refer to the Midlands of England, and I have reported repeatedly the steady increase there of deficiency diseases, sterility and parasitism, linking them with feeding difficulties including the poor quality of home-grown feeding-stuffs, lack of protein and minerals.

The shortage of protein, especially in dairy stock, is very marked, but I believe the foodstuff, a carbohydrate, most missed by all classes of stock, including poultry, is maize in all its forms. Does it contain certain small factors essential to forced production not common to others?

During the war another Stafford dairy herd had a high rate of infertility, in the first instance due to bacterial infection, which was apparently cleared up with no marked improvement in the conception rate. Uterine treatment was very intensive, and I suggested that, except in cases with obvious discharge, all treatment should stop and the herd be allowed to follow a more natural routine and that the feeding be investigated, although I did not suspect pasture.

Meat and bone was not ordinarily available, but as an experiment the owner was allowed a small quantity for use on a group of heifers. My veterinary colleagues interested in this herd were suspecting pasture, and certainly at this farm the owner was rapidly working round all land on a short ley basis.

There was a considerable improvement in the whole herd that season, but the group of heifers, which received the meat and bone, gave the best results and were practically all in-calf at the first service. Unfortunately, owing to restriction of supplies, the experiment could not be extended and followed up.

It would be interesting to know whether in dairy herds which have been on short leys for some time the non-fatty solids have fallen. When I was in Hong Kong, with a dairy farming company with a herd of 1,000 milking cows, experience suggested that mineral deficiencies in feeding were closely associated.

The feeding of hay or straw has been suggested as a preventive of "bloat" in cattle on short leys. After the 1914-18 war, an order was in operation in the South-West counties of Scotland, requiring owners to report all sudden deaths of cattle, and as the majority of carcases were dealt with through one local knackery, I and my colleagues had excellent opportunities to follow up these cases, and the following points were noted:—

1. In all cases of "bloat" the only lesions at *post-mortem* examination were those of suffocation. At one time it appeared as if inflammation of the fourth stomach might be a factor, but later we suspected that this occurred in cases of grass tetany.

2. Deaths from bloating occurred at very definite periods during the summer, and we could forecast an epidemic of reports 36 to 48 hours previously. If there was a dry spell with close grazing of pasture with a high percentage of white clover, followed by rain, or even heavy dew, there was a sudden growth of the matt of white clover, with cases of "bloat" about 24 to 48 hours later, disappearing as the clover leaf developed.

Owners were able to anticipate this and move stock to rough pasture, and it was then that I suggested cows be held in the sheds for about an hour after milking and given some hay.

The results were good except for complaints about dirty sheds, and I am afraid to overcome this they often fed hay during milking.

I do not intend to claim that meat and bone is a panacea for many ailments, but it is an animal product and its use does appear to confirm feeding deficiencies as yet unsolved. Unfortunately, supplies are limited, especially recently owing to increases in horse meat for human consumption and the cat and dog meat trade. Poor quality cattle are being diverted to abattoirs for manufacturing, boned-out carcases being wasted at knackeries and kennels with no plants to process them.

Professor Scott Watson's reference to ley pastures in Scotland may both confirm Mr. Steele Bodger's criticisms regarding their effect on animal health farther south, and point to the remedy.

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal opinions of the writer only and their publication does not imply endorsement by the N.V.M.A.

INCIDENCE OF WARBLE-FLY LESIONS IN HORSES

Sir,—I am very interested in the incidence of warble-fly lesions in horses, and would be glad to hear from practitioners whose work takes them into racing stables, as to whether they have observed an increase in hypoderma lesions in equines during this month.

During the first fortnight of this month I have found four of our horses affected, and whilst the condition does not appear to have caused any great discomfort to the animals, with one exception, it has seriously interfered with training, owing to the lesions being sited on withers and back. In one case only was there fairly widespread oedema over the scapular region.

Yours faithfully,

High Lodge, Iverley, Stourbridge, Worcs. D. J. Anthony.

April 27th, 1948.

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JEWISH AND MOHAMMEDAN METHODS OF SLAUGHTER

Sir,—Mr. Bywater's letter in the issue of *The Veterinary Record* of April 24th deserves all the encouragement of the profession. During the war this matter was raised privately in the confines of the Meat Supply Association with whom I was associated. Our investigations, like those of Mr. Bywater, failed to find anything in the Mosaic Law anent the matter. The Jews made "void the law by their oral traditions" in this matter, and it is time the killing of their cattle was brought into line with our humane laws.

Yours faithfully,

28, West Pilton Park, Edinburgh, 4. John M. Buchanan.

May 1st, 1948.

DISEASES OF ANIMALS ACTS, 1894 to 1937, and AGRICULTURE ACT, 1937 (PART IV).

Summary of Returns of Confirmed Outbreaks of Scheduled (Notifiable) Diseases

Period	Anthrax	Foot-and-mouth	Fowl Pest	Parasitic Mange*	Sheep Scab	Swine Fever
Apl. 1st to 15th, 1948	6	—	6	—	—	4
Corresponding period in—						
1947	4	—	34	—	1	—
1946	8	—	—	—	—	21
1945	3	4	—	1	—	54
Jan. 1st to Apl. 15th, '48	35	—	155	1	21	11
Corresponding period in—						
1947	20	83	61	1	15	14
1946	37	20	—	4	34	192
1945	37	63	—	4	33	331

Note.—The figures for the current year are approximate only.
* Excluding outbreaks in Army Horses.

Tuberculosis Order of 1938

The number of bovine animals slaughtered under the Tuberculosis Order of 1938 during the period January 1st to March 31st, 1948, was 1,743.